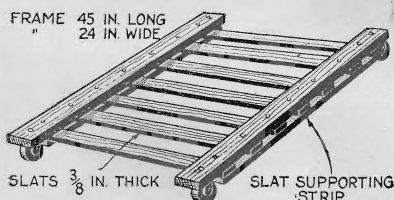


Valuable Kinks for Your Car

Protector Keeps Starter Switch Clean—Accurate Way To Fill Batteries—Other Ingenious and Useful Ideas

Underslung Auto Creeper

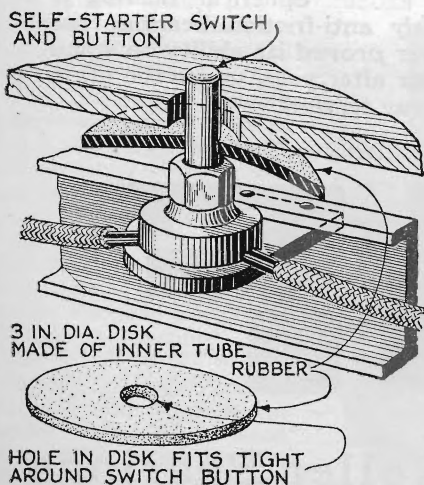
MANY motor car owners hesitate to tackle any job that requires crawling under the car, because, even with overalls, clothes are ruined by the oily slime on the floor. The remedy for this situation is to build yourself a comfortable auto creeper so that you can slide under any part of the car without damaging your clothes, and in a most convenient manner. Modern cars are built so close to the ground that space under them is at a premium. Every inch



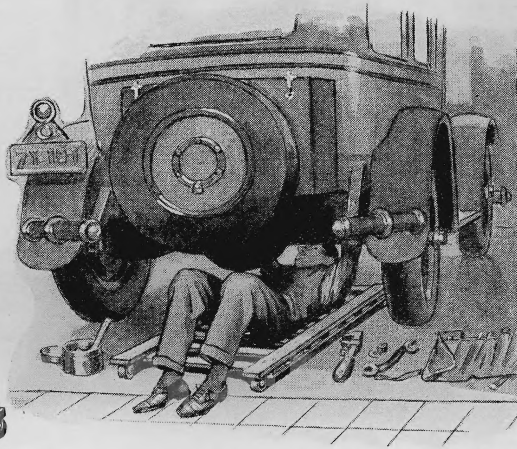
counts. The creeper shown in the drawing and illustrated in use is comfortable and affords you maximum working space.

Starter Switch Protector

THE mud brought into your car often works down through the hole around the starter switch plunger and pieces of grit jam it so that it will not work. A simple way to overcome this trouble is to cut a disk of sheet rubber out of an old inner tube and in the center of the disk cut a hole somewhat smaller than the starter switch plunger. Stretch the hole over the plunger as shown in the illustration. Dirt that drops through the hole in the floor board will slide off the rubber shield to the ground without getting into the switch.



In muddy country a rubber disk around the starter switch plunger will keep out the dirt



This underslung creeper, which is easily made at home, makes work under the car a pleasure and gives you as much space as possible to move about

Ten Dollars for an Idea!

WILLIAM P. MARTIN, of Jersey City, N. J., wins the \$10 prize this month for his suggestion of a battery filler. POPULAR SCIENCE MONTHLY awards \$10 each month, in addition to regular space rates, to the reader sending in the best idea for motorists. Other contributions that are published on this page are paid for at the usual rates.

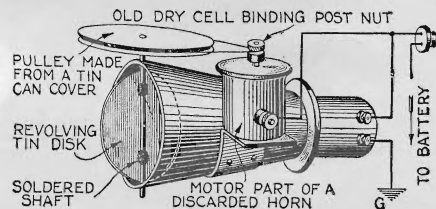
Mysterious Ignition Woes

HIGH tension current, such as is employed to produce sparks at the spark plug points in an automobile engine, jumps across the points only when it can find no easier path to travel. Occasionally a cylinder will misfire in a mysterious way, due to an accidental path being provided for the passage of the high tension current. In a heavy rainstorm the motor may start to misfire because a rain drop is now and then flung by the fan onto the side of the spark plug. The moisture bridges over the insulation and the cylinder will misfire until the heat of the plug evaporates the water. If the plugs are covered with a layer of dust and grime, trouble is often experienced in starting a motor that has been left out in the rain for some time, because moisture has condensed on the dust and made it a good path for high tension current. The remedy for that trouble is to keep the exposed part of the insulation wiped clean at all times.

Another source of trouble is old ignition cable. The rubber dries out and cracks and the spark jumps through the crack to the nearest metal. The cable may look all right, but if you lift the hood in the dark you will spot the leak.

Unique Note for Your Horn

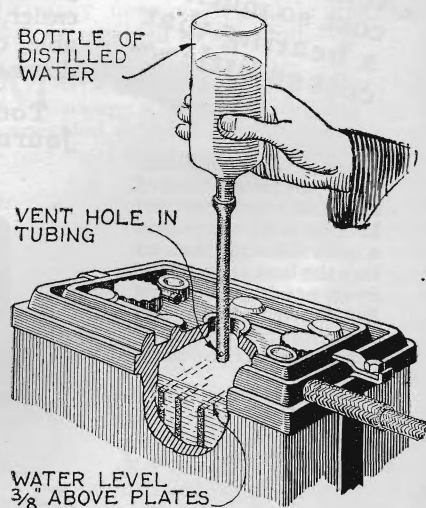
IF YOU are tired of the steady tone of your horn, here is a way to get a warbling effect that will arrest the attention of every pedestrian. The illustration below shows the arrangement. It can be applied to any type of horn, either motor driven or buzzer type. First fit the shaft through the mouth of the horn and to this attach a metal disk just small enough so that it can be revolved. Now fit a large pulley on top of the shaft. This can be made of a circular disk of cigar box wood with a groove whittled in the edge. Attach a small motor to the side of the horn.



A most peculiar warbling note can be obtained by the use of a disk rotated by a small motor. Your horn will command attention on the road

Automatic Battery Filler

TAKE a bottle of small size and a piece of rubber tube large enough to stretch over the end as shown. Cut a small hole in the side of the tube a distance from the end equal to the height of the battery solution at the maximum point. Squeeze the tube with your fingers, insert it in the battery till it touches the plates, and let go the tube. Water will flow into the battery until the hole is covered.



You can fill each cell of your battery with this simple device without spilling any of the water